

UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

**THIRD YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF ENVIRONMENTAL SCIENCE**

CHEM 317: ENVIRONMENTAL CHEMISTRY 1

STREAM: BSc (ENSCI)

TIME: 2 HRS

DAY: FRIDAY [14.30 – 16.30 P.M]

DATE: 30/01/2026

THIS QUESTION PAPER CONSISTS OF TWO (2) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAY

Answer ALL the Questions**SECTION A:****QUESTION ONE (30 MARKS)**

- i. State the major layers of the atmosphere and their composition (5 Marks)
- ii. Define the term “atmospheric temperature inversion” (2 Marks)
- iii. Explain the global response to ozone depletion (3 Marks)
- iv. Illustrate the acute and delayed effects of air pollution on human health (4 Marks)
- v. Discuss plume behavior in relation to pollutant dispersion (3 Marks)
- vi. Explain eutrophication with an example (3 Marks)
- vii. Describe global warming and list two causes (4 Marks)
- viii. Discuss the Bhopal disaster as one major industrial air pollution accident (3 Marks)
- ix. Highlight the importance of sewage treatment and BOD measurement (3 Marks)

SECTION B:**QUESTION TWO (20 MARKS)**

- (a) Define indoor air pollution and list two common causes (5 Marks)
- (b) Illustrate control measures for indoor pollution. (5 Marks)
- (c) Explain soil pollution. (2 Marks)
- (d) Define petroleum-based fuels and their noxious emissions. (4 Marks)
- (e) Highlight alternative fuels and their sources. (4 Marks)

QUESTION THREE (20 MARKS)

- (a) Discuss biological effects of water pollutants. (5 Marks)
- (b) Highlight key water quality legislations. (3 Marks)
- (c) Explain effects of soil pollution on crops and humans. (4 Marks)
- (d) Outline chemical contaminants in food and their causes. (4 Marks)
- (e) Illustrate hydrogen gas as a clean energy carrier. (4 Marks)